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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/548,748

09/08/2005

Markus Frank

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EXAMINER

IBRAHIM, MEDINA AHMED

ART UNIT

PAPER NUMBER

1638

MAIL DATE

DELIVERY MODE

02/19/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/548,748	Applicant(s) FRANK ET AL.	
	Examiner Medina A. Ibrahim	Art Unit 1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,7-9,11,14,16,17,19,20,23,25,28 and 29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 7-9, 11, 14, 16-17, 19-20, 23, 25, and 28-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Applicant's response filed 10/20/09 in reply to the Office action of 07/21/09 has been entered. New claims 28-29 are added.

Claims 1, 3, 7-9, 11, 14, 16-17, 19-20, 23, 25, and 28-29 are pending and are examined.

All previous objections and rejections not set forth below have been withdrawn in view of Applicant's amendment and/or upon further consideration.

Claim Rejections - 35 USC § 103

1. Claims 1, 3, 7-9, 14, 16-17, 19-20, 23 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simmons et al (WO 2002101079A2, Applicant's IDS) in view of Huckelhoven et al (Plant Mol. Biol. (2001) 47 (6):739-748), Sonnewald et al (US 6,229,067 B1), and Nelson et al (Ann. Phytopath. Soc. Japan (1989)55:156-160). This rejection is repeated for the reasons of record as set forth in the last Office action of 07/21/09. Applicant's arguments filed 10/20/09 have been fully considered but are not deemed persuasive.
2. Applicant reiterates the arguments that Simmons et al in view of Huckelhoven do not teach or reasonably suggest the claimed invention. Applicant asserts that the cited reference by Sonnewald et al and Nelson do not provide a motivation to express Bt1 protein in the mesophyll cells using mesophyll-specific promoter. Applicant specifically argues that while Sonnewald et al provides general mention of leaf specific expression

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of disease resistant genes, there is no disclosure to express a Bax inhibitor under the control of a mesophyll-specific expression (response, pp. 5-6).

3. These arguments are not persuasive for the following reasons: firstly, Sonnewald was relied upon because it provides mesophyll-specific expression of a desired gene encoding a protein that confers resistance to fungal infection (see at least claim 5). At column 5, the last full paragraph, Sonnewald et al state "[t]he promoters according to the present invention now have the surprising advantage of being able to express resistance genes specifically at the actual site of action within the plant....As surprisingly demonstrated by the test results, preferred promoters, make possible, for the first time, specific localization and expression of a foreign gene in the mesophyll of leaves....., while no activity can be found in parenchymatic tissue and also in xylem, phloem, and others." Secondly, since the rejection is one of obviousness and not one of anticipation, Sonnewald need not disclose expression of Bax11 under mesophyll-specific promoter. Thirdly, the use of patents as references is not limited to what the patentees describe as their own inventions or to the problems with which they are concerned. They are part of the literature of the art, relevant for all they contain." In re Heck, 699 F.2d 1331, 1332-33, 216 USPQ 1038, 1039 (Fed. Cir. 1983) (quoting In re Lemelson, 397 F.2d 1006, 1009, 158 USPQ 275, 277 (CCPA 1968)). A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill the art, including nonpreferred embodiments. Merck & Co. v. Biocraft Laboratories, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989). See MPEP 2123.

Applicant argues that Nelson provides an experiment that suggests the resistance reaction of barley to powdery mildew occurs mainly in the epidermis, while the mesophyll may play a supportive role in the defense mechanism, but does not suggest or motivate expression of Bax inhibitor proteins only in the mesophyll. Applicant argues that the discovery of a method to generate or increase resistance to plant pathogens without loss of the mlo resistance phenotype in transgenic plants expressing BI1 in a mesophyll-specific manner, is totally unexpected in view of the prior art. Therefore, Applicant contends that none of the cited references provides a motivation to make the claimed invention and that, the claimed invention is not prima facie obvious. Applicant requests the rejection be withdrawn.

These are not found persuasive. Nelson was relied upon because it provides the roles of epidermis and mesophyll cells in the resistance of barley to powdery mildew. One of ordinary skill in the art who reads Nelson would acknowledge that epidermis and mesophyll cells play important roles in the resistance of barley to powdery mildew. Applicant provides no evidence that suggests mesophyll cells are unimportant in the resistance of barley to powdery mildew or any evidence that suggests the mesophyll-specific expression of a Bax protein or any other disease resistant protein in a transgenic plant is detrimental to the plant.

Regarding Applicant's arguments that the unobviousness of the claimed invention lies in the unexpected discovery of a method to generate or increase resistance to plant pathogens without loss of the mlo resistance phenotype in transgenic plants expressing BI1 in a mesophyll-specific manner are not persuasive because the

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rejected claims do not recite such invention. Claim 11 drawn to Applicant's unexpected results is not rejected.

Regarding the lack of motivation to combine the references, it is noted that according to KSR cited by Applicant there is no requirement that an "express, written motivation to combine must appear in prior art references before a finding of obviousness." See *Ruiz v. A.B. Chance Co.*, 357 F.3d 1270, 1276, 69 USPQ2d 1686,1690 (Fed. Cir. 2004). Therefore, for all the reasons discussed above and in the last Office action, the claimed invention is obvious over the cited references. Applicant has provided no convincing evidence to the contrary. Therefore, the rejection is maintained.

Allowable Subject Matter

Claim 11 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Medina A. Ibrahim whose telephone number is (571)272-0797. The examiner can normally be reached on M-TH 8:00 am to 5:30 PM, and every other Friday from 8:00 AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on 571-272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MAI
2/16/2010

/Medina A Ibrahim/
Primary Examiner, Art Unit 1638